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10/583,971	06/22/2006	Hiroshi Machida	SH-0064PCTUS	8398
21254 7590 11/18/2011 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817				
EXAMINER				
HOFFMANN, JOHN M				
ART UNIT		PAPER NUMBER		
1741				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/583,971

## Applicant(s)

MACHIDA, HIROSHI

## Examiner

JOHN HOFFMANN

## Art Unit

1741

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 8, 10 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 11 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-848)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7, 11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is confusing because the preamble calls for making a porous material, but the last two lines require sintering into a clear glass - thus resulting in a non-porous material. Thus the body of claim contradicts the preamble.

The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the [fifth paragraph of 35 U.S.C. 112], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

Claim 2 is rejected under 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends. Claim 2 is directed a product, but claim 1 is directed to a method. Thus claim 1 doesn't further limit the method, rather it takes it to a mutually exclusive different statutory class. Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper

dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for the claim 3 limitation that the target is displaced relative to the burner being moved. Although the specification states that a deposition area is displaced, there is no mention that the target is displaced. The plain reading is that the rotating of the target causes the "area" to be displaced, but not the target itself.

***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

of the following is required: There is no mention in the specification of the target being displaced as recited in claim 3. .

As pointed out in **MPEP 608.01(o)**:

Note that examiners should ensure that the terms and phrases used in claims presented late in prosecution of the application (including claims amended via an examiner's amendment) find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description, see 37 CFR 1.75(d)(1). If the examiner determines that the claims presented late in prosecution do not comply with 37 CFR 1.75(d)(1), applicant will be required to make appropriate amendment to the description to provide clear support or antecedent basis for the terms appearing in the claims provided no new matter is introduced.

As indicated above, examiner could not find any antecedent basis for the language and any support appears to be very unclear. Thus it is deemed that a prima facie showing has been made of lack of clear support or antecedent basis. The burden is now on applicant to demonstrate clear support or antecedent basis for the claim language.

### ***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 7, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spainhour 4317667 in view of Tsuchiya 5114338.

Spainhour discloses the invention except for the dehydration.

The preamble is disclose – for example see col. 1, lines 28-32. Also, col. 2, lines 16-20 state that the soot is sintered: this means that the glass is porous prior to the sintering.

The flame hydrolyzing step is disclosed at col. 2 lines 10-11; the Abstract clearly indicates that an oxyhydrogen flame is used. The “using a burner” step is disclosed at col. 2, lines 13-17.

As to adjusting an amount of hydrogen and oxygen - such is deemed to be inherent, because before the process there was no hydrogen and oxygen, thus on has

to adjust the zero flow to be non-zero. Additionally/alternatively it would have been obvious to adjust the temperature of the flame by adjusting the gas flows, because temperature is understood to be a near-universal result-effective variable:

**From 2144.05 [R-1] Obviousness of Ranges**

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.);

As to the cooling step: It requires cooling "while adjusting a temperature difference...when touching a flame of said burner...." However the method does not require any step of touching the flame. In other words: the claim does not require any cooling, if there is no touching. As shown in Spainhour's figures, the flame does not touch the preform - thus it requires no cooling.

Even if the claim does require cooling, the range 200-700 C it self only pertains to when there is touching. Spainhour discloses cooling at col. 3, lines 26-38.

The sintering is discloses at col. 2, line 18, but Spainhour is silent as to dehydrating.

It is well understood that the by-product of an oxyhydrogen flame is water, which contaminates the fiber preform. As pointed out in Tsuchiya at col. 1, lines 22-25, it is necessary to dehydrate soot preforms. It would have been obvious to dehydrate the Spainhour preform prior to sintering so as to remove the water (hydroxyl ions).

Claim 2 is clearly met.

Claim 3: It would have been obvious that the target is inserted into the furnace and removed from the furnace. Each of these movements would be considered to be a displacement. Alternatively: claim 3 does not require a step of "displacing", rather it recites a condition - the target is in a state of being 'displaced'. It is clear from the drawing that the target "is displaced" relative to the burner, since there is a space between them. That is, they are not in the same location.

Claim 7: as with claim 1, the temperature pertains to temperature while touching, and thus does not define over the combination which has no touching.

Claim 9 refers to an efficiency in the past tense "was in a range" thus it is deemed to carry a different meaning - as compared to the present tense of the other claims. There is also no connection the efficiency was related to the "using" step or the particles of claim 1. Moreover, claim 1 does not explicitly require the particles be deposited. Rather claim 1 merely recites "using" a burner "to deposit". Examiner interprets "to deposit" as being an intention, not a result. Thus examiner interprets the use of past tense with the intention of "to deposit" as being a premeditated goal of a deposition efficiency within the 0.51-0.59 range.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spainhour 4317667 in view of Tsuchiya as applied to claim 1, above, and further in view of Andrejco 4474593.



Spainhour does not disclose the construction of the burner. However the claimed concentric tube arrangement is typical; Andrejco is evidence of such (col. 1, lines 26-30). It would have been obvious use to a concentric tube arrangement, since such is typical. Or, more specifically, it would have been obvious to use Andrejco's burner in the Spainhour process, for the advantages of adjustability and accurate alignment. (Andrejco col. 1, lines 43-59)

Claim 5: See col. 3, lines 26- 35 which discloses at least one tube supplied with  $\text{SiCL}_4$ , and at least one tube supplied with hydrogen. As to the air, oxygen and nitrogen: it would have been obvious to have air within the furnace/burner during the set up of the process and after completion of the deposition. One would understand that air (which comprises oxygen and nitrogen) would be 'supplied' to all of the tubes, for example by diffusion. The claim does not require any step of "supplying" nor limit when the tubes are in the state of being "supplied". Compare the claim 1 language of "hydrolyzing", "using" adjusting, etc. To the passive language of claim 5 language "supplied".

Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spainhour 4317667 in view of Tsuchiya as applied to claim 1, above, and further in view of Sayce 5735928.

The deposition rate is not disclosed Spainhour. However it would have been obvious to make the apparatus and preform as large or small as desired, depending upon the amount of fiber one desires to make. That is, it is largely a matter of common

sense, that by using a larger burner, and a larger starting target, one would expect to be able to have a faster deposition rate, because one can increase the amount of reactants supplied to the burner.

**From MPEP 2144.04**

**A. Changes in Size/Proportion**

In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (Claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) ("mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled." 531 F.2d at 1053, 189 USPQ at 148.).

In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Sayce is cited as evidence that it is known to deposit silica at a rate of over 6000 g/hour (see col. 3, lines 26-28).

Claims 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spainhour 4317667 in view of Tsuchiya as applied to claim 1, above, and further in view of Suda 4618354.

Spainhour does not disclose the deposition efficiency. Suda (at col. 1, lines 12-55 and figure 8) reasonably conveys the economics of fiber production. That is one wishes to "produce a large amount of optical fiber during a short period of time. And that when one increase the flow rate, the deposition efficiency (and the yield) can decrease. Figure 8 suggests efficiencies between about 0.2 and 0.75 are possible. It would have been obvious to perform routine experimentation to determine the optimal

raw material supply (x-axis of figure 8) to maximize the amount of fiber in the shortest time period. Clearly the total production rate would be proportional to the efficiency as well as the raw material gas speed.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-7, 9, 11 and 13 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fritsche is cited as teaching to cool preforms during OVD processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN HOFFMANN whose telephone number is (571)272-1191. The examiner can normally be reached on Monday through Wednesday, roughly 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Daniels can be reached on 571-272-2450. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Hoffmann  
Primary Examiner  
Art Unit 1741

/John Hoffmann/  
Primary Examiner, Art Unit 1741